Read the operator's manual entirely. When you see this symbol, the subsequent instructions and warnings are serious - follow without exception. Your life and the lives of others depend on it!

Cover illustration may show optional equipment not supplied with standard unit.
General Information

Important Notice

Great Plains Manufacturing, Inc. provides this publication "as is" without warranty of any kind, either expressed or implied, while every precaution has been taken in the preparation of this manual, Great Plains Manufacturing, Inc. assumes no responsibility for errors or omissions. Neither is any liability assumed for damages resulting from the use of the information contained herein. Great Plains Manufacturing, Inc. reserves the right to revise and improve its products as it sees fit. This publication describes the state of this product at the time of its publication, and may not reflect the product at all times in the future.

Printed in the United States of America.

For your convenience, record your Serial Number, Model Number and the Date Purchased in the spaces provided below. Have this information before you when calling a Great Plains Authorized Dealer.

This Operators Manual applies to the 30’ 2-Section Folding Soybean Machine:

Owner’s Information

Name: _____________________________________
Address ____________________________________
City________________State ____ Zip
Phone__________________________

Serial Number ______________________
Model Number ______________________
Date Purchased ____________________

Name of Dealership ___________________________
Dealer’s Name _____________________________
Address ____________________________________
City________________State ____ Zip
Phone__________________________
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Using this Manual

For your safety and to help in developing a better understanding of your equipment we highly recommend that you read the operator sections of this manual. Reading these sections not only provides valuable training but also familiarizes you with helpful information and its location. The parts sections are for reference only and don’t require cover to cover reading. After reviewing your manual store it in a dry, easily accessible location for future reference.

Introduction

This manual has been prepared to instruct you in the safe and efficient operation of your 30’ 2-Section Folding Soybean Machine. Read and follow all instructions and safety precautions carefully.

Read and follow all instructions and safety precautions carefully.

The parts on your 30’ 2-Section Folding Soybean Machine have been specially designed and should only be replaced with genuine Great Plains parts. Therefore, should your 30’ 2-Section Folding Soybean Machine require replacement parts go to your Great Plains Dealer.

The right hand and left hand as used throughout this manual is determined by facing in the direction the machine will travel when in use unless otherwise stated.

Serial Number

The serial number plate is located on the front of the left hand transport axle post. It is suggested that the serial number and purchase date also be recorded for your convenience in the space provided.

The serial number provides important information about your 30’ 2-Section Folding Bean Machine and may be required to obtain the correct replacement part. Always use the serial number and model number when sending correspondence or when ordering parts from your Great Plains Dealer.

The SAFETY ALERT SYMBOL indicates that there is a potential hazard to personal safety involved and extra safety precautions must be taken. When you see this symbol, be alert and carefully read the message that follows it. In addition to design and configuration of equipment; hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.

Watch for the following safety notations throughout your Operators Manual:

DANGER!
Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations.

WARNING!
Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION!
Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTE: Indicates a special point of information which requires your attention.
Most accidents are the result of negligence and carelessness, usually caused by failure of the operator to follow simple but necessary safety precautions. The following safety precautions are suggested to help prevent such accidents. The safe operation of any machinery is a big concern to consumers and manufactures. Your 30’ 2-Section Folding Soybean Machine has been designed with many built-in safety features. However, no one should operate this product before carefully reading this Operators Manual.

General Operation & Repair

1. Never allow the 30’ 2-Section Folding Bean Machine to be operated by anyone who is unfamiliar with the operation of all functions of the unit. All operators should read and thoroughly understand the instructions given in this manual prior to moving the unit.
2. Make sure safety rules are understood before operating machinery or tractor.
3. Never permit any persons other than the operator to ride on the tractor.
4. Never permit any persons to ride on or stand near the drill while it is in operation.
5. Regulate your speed to the field conditions, maintaining complete control at all times.
6. After repairing or adjusting, make sure all tools and parts are removed from the implement before attempting to operate it.
7. Do not grease or oil machine while it is in operation.
8. Loose fitting clothing should not be worn as it may catch in moving parts.
9. Never dismount from a moving tractor.
10. Do not leave the tractor or the implement unattended with the engine running.
11. Do not stand between the tractor and the implement during hitching.
12. Detach and store implements in an area where children normally do not play. Stabilize implements by using suitable supports and block wheels.
13. If a hydraulic leak develops, correct it immediately. Escaping hydraulic oil can have extremely high pressure. A stream of high pressure oil may easily penetrate the skin as with modern needle-less vaccination equipment - but with the exception that hydraulic fluid may cause blood poisoning. It is imperative that the connections are tight and that all lines and pipes are in good condition. If an injury is caused by the escaping hydraulic fluid, see doctor at once!
14. Use a piece of cardboard or wood to detect leaks of hydraulic oil under pressure.
15. Be sure to relieve all hydraulic pressure before disconnect any lines or pipes between the implement and the tractor hydraulic system. Keep all guards and shields in place.

Transporting

1. Use good judgement when transporting tractor and implements on the highway. Always maintain complete control of the machine.
2. Limit transport speed to 20 mph. Transport only with a farm tractor of sufficient size and horse power.
3. Always make sure flashing safety lights, “Slow Moving Vehicle” emblem, and reflectors are in place and visible prior to transporting the machine on public roads.
4. Know your state and local laws concerning highway safety and regulations. Comply with these laws when transporting machinery.
5. Use warning flags or approved warning lights at night and during other periods of poor visibility. Do your best to prevent highway accidents.
6. Always make sure transport pins are in place to lock up the drill in case a hydraulic hose ruptures during transport.

Tire Handling & Repair

1. Tire changing can be dangerous and should be performed by trained personnel using the correct tools and equipment.
2. Do not re-inflate a tire that has been run flat or seriously under inflated. Have it checked by qualified personnel.
3. When removing and installing wheels, use wheel handling equipment adequate for the weight involved.

Safety Decals

1. Your 30’ 2-Section Folding Soybean Machine comes equipped with all safety decals in place. They were designed to help you safely operate your 30’ 2-Section Folding Bean Machine. Read and follow their directions.
2. Keep safety decals clean and legible.
3. Replace all damaged or missing safety decals. To order new safety decals go to your Great Plains Dealer and refer to the parts section for safety decal package part number.
4. Replace these decals whenever they become worn or unreadable. To install new safety decals:
   a. Clean the area the decal is to be placed
   b. Peel backing from the decal. Press firmly on to surface being careful not to cause air bubbles under the decal.
Section 1 Safety Rules

CAUTION

- Read Owner’s Manual Before Operating Drill
- Stand Clear When Folding and Unfolding Drill
- Stand Clear When Raising and Lowering Drill
- Keep All Safety Shields and Devi ces in Place
- Keep Hands and Clothing Away From Moving Chains and Sprockets
- Never Ride on Drill
- Before Transporting, Be Sure Transport Lock Pins Are in Transport Position and Folded Boxes Are Locked In
- Hitch Drill to Tractor Before Folding, Unfolding or Filling With Seed
- Always Lower or Properly Support Drill Before Servicing
- Escaping Hydraulic Fluid Can Cause Serious Injury

General Caution

818-078C

Amber Reflectors

818-229C

Red Reflector

818-230C
**Section 1 Safety Rules**

818-003C
Slow Moving Vehicle Emblem

818-020C
Caution Lowering Drill

818-188C
Transport Speed Warning

818-205C
Do Not Operate w/o Guard in Place
Section 1 Safety Rules

**WARNING**

NEGATIVE TONGUE WEIGHT HAZARD

Negative tongue weight can cause immediate destruction of tongue when unloadign implement.

- To prevent serious injury or death.
- Always be certain implement is hitched securely to loader drawbar before lifting.
- Lower implement BFORE unloading.

818-019C

Warning Negative Tongue Weight
Section 2 Assembly Instructions & Set-Up

Torque Values Chart for UNC Threads

NOTE: Manufacturing marks will vary.

<table>
<thead>
<tr>
<th>Bolt Size</th>
<th>Grade 2</th>
<th>Grade 5</th>
<th>Grade 8*</th>
</tr>
</thead>
<tbody>
<tr>
<td>inches</td>
<td>Foot Pounds</td>
<td>Newton-Meters</td>
<td>Foot Pounds</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>6.35</td>
<td>6.8</td>
<td>8.13</td>
</tr>
<tr>
<td>5/16&quot;</td>
<td>7.94</td>
<td>12.6</td>
<td>16.3</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>9.53</td>
<td>20</td>
<td>27.1</td>
</tr>
<tr>
<td>7/16&quot;</td>
<td>11.11</td>
<td>30</td>
<td>40.7</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>12.70</td>
<td>45</td>
<td>61.0</td>
</tr>
<tr>
<td>9/16&quot;</td>
<td>14.29</td>
<td>65</td>
<td>88.1</td>
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<tr>
<td>5/8&quot;</td>
<td>15.88</td>
<td>95</td>
<td>128.7</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>19.05</td>
<td>150</td>
<td>203.3</td>
</tr>
<tr>
<td>7/8&quot;</td>
<td>22.23</td>
<td>160</td>
<td>216.8</td>
</tr>
<tr>
<td>1&quot;</td>
<td>25.40</td>
<td>250</td>
<td>338.8</td>
</tr>
<tr>
<td>1 1/8&quot;</td>
<td>25.58</td>
<td>300</td>
<td>388.8</td>
</tr>
<tr>
<td>1 1/4&quot;</td>
<td>31.75</td>
<td>1120</td>
<td>1240</td>
</tr>
<tr>
<td>1 3/8&quot;</td>
<td>34.93</td>
<td>1460</td>
<td>1680</td>
</tr>
<tr>
<td>1 1/2&quot;</td>
<td>38.10</td>
<td>1940</td>
<td>2200</td>
</tr>
</tbody>
</table>

* Thick nuts must be used with Grade 8 bolts

NOTE: Torque requirements listed above do not apply to self-locking nuts. For self-locking nuts increase the torque requirements listed by 15%.

Tire Inflation Chart

<table>
<thead>
<tr>
<th>Tire Size</th>
<th>Inflation PSI</th>
<th>Tire Size</th>
<th>Inflation PSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.50 x 20&quot; 4-Ply Drill Rib</td>
<td>28</td>
<td>11L x 15&quot; 6-Ply Rib Implemert</td>
<td>28</td>
</tr>
<tr>
<td>9.0 x 22.5 10-Ply Highway Service 70</td>
<td>70</td>
<td>11L x 15&quot; 12-Ply Rib Implemert</td>
<td>52</td>
</tr>
<tr>
<td>9.0 x 24&quot; 8-Ply Rib Implemert</td>
<td>50</td>
<td>12.5L x 15&quot; 8-Ply Rib Implemert</td>
<td>36</td>
</tr>
<tr>
<td>9.5L x 15&quot; 6-Ply Rib Implemert</td>
<td>32</td>
<td>12.5L x 15&quot; 10-Ply Rib Implemert</td>
<td>44</td>
</tr>
<tr>
<td>9.5L x 15&quot; 8-Ply Rib Implemert</td>
<td>44</td>
<td>16.5L x 16.1&quot; 10-Ply Rib Implemert</td>
<td>36</td>
</tr>
<tr>
<td>9.5L x 15&quot; 12-Ply Rib Implemert</td>
<td>60</td>
<td>41 x 15&quot; x 18 - 22-Ply Rib Implemert</td>
<td>44</td>
</tr>
</tbody>
</table>

NOTE: All tires are warranted by the original manufacturer of the tire. Tire warranty information can be found in the brochures included with your Operator’s and Parts Manuals or online at the manufacturer’s websites. For service assistance or information, contact your nearest Authorized Farm Tire Retailer.

Manufacturer
Titan
Goodyear
Firestone

Website
www.titan-intl.com
www.goodyearag.com
www.firestoneag.com

Manufacturer Website

5/3/05 Great Plains Mfg., Inc. 2SBD30 30-Foot, Folding, Soybean Machine 173-086M 7
Assembly Instructions

1. Read “Section 1 Safety Rules” on page 3 before assembling machine.
2. Set the tongue approximately 21" off the ground in a horizontal position with stable blocking for support.
3. Raise the main frame up, keeping the side members horizontal. Position the main frame over the tongue and lower into position.
4. Secure tongue to main frame with 1"-6 x 2 1/2" long bolts, lock washers and nuts.
5. Attach the tongue screw jack and remove blocking so the unit is sitting on the ground.
6. Remove the safety wires from each hydraulic cylinder rod clevis between the tires and remove cylinders. See “Section 2 Bleeding Lift Hydraulics” on page 11.
7. Slide the hydraulic hoses from the mainframe through the tongue and pull them out at the tractor end. Attach tractor male couplers to the hydraulic hoses.
8. Hook tractor up to the tongue and plug hydraulic connectors into the tractor. With tractor running at an idle speed, charge the machine hydraulic system. See “Section 2 Bleeding Lift Hydraulics” on page 11. (Be sure your tractor has plenty of hydraulic fluid. This system requires approximately 3.3 gallons.)

9. Attach the gauge wheel turnbuckle to the gauge wheel arm on each section and then mount the wheel and tire.
10. Position the two drill boxes in line, end to end, with the end chain drive sprockets outboard and approximately 3" between the machine boxes.
11. Using the tractor, back the machine’s main frame up to the center of the two drill boxes. When getting close, position the posts on each side of the main frame so the face of the post mounting angles are towards the machine frames. Attach the post to the machine frames using (16) 5/8"-11 x 1 3/4" long bolts, (4) 5/8"-11 x 4" x 5 1/4" u-bolts, lock washers and nuts. Tighten all the bolts and u-bolts.
12. Attach frame adjustment link from the machine frame to the pivot post using the clevis pin with hair pin cotters. Pin to pin centers should be adjusted to approximately 38".
13. Locate the stabilizer frames inside mounting holes 85 13/16" from the inside of the inboard end of each drill box frame, Figure 2-1. Using 5/8" u-bolts, 1/2" u-bolts, 5/8"-11 x 7" long bolts, lock washers and nuts; mount them to the box frame.

NOTE: One opener mounting u-bolt will be replaced by 5/8"-11 x 7" long bolts.
14. Adjust clevis end of pull bars so that the distance from the center of pull bar pin holes are approximately 134 1/4".

15. Mount pull bars to drill transport stabilizers and tongue slide. With the tongue slide in the back position against its stop, adjust pull bar lengths so drills are in line with one another and parallel to the back edge of the main frame.

16. Raise the machine and place the transport lock pins (2) in the transport position through the holes in the main frame axle side tubes as shown in Figure 3-3.

17. Fold the machine, making sure that the tongue pull bar slide moves smoothly up the tongue. When drill boxes are almost folded in, stop and adjust the post-frame adjustment links on each box so that the tang on each drill transport stabilizer frame lines up with the nest on the front of the main frame. Fold machine completely closed. Refer to Figure 3-7 & Figure 3-6.

18. With pull bar slide forward on the tongue and machine folded completely, position the pull bar lock pin, across the top of the tongue slide as shown in Figure 3-2. Adjust the transport lock bolt on top and front of tongue up against lock pin with 1/16" clearance and lock the jam nut. This pin prevents the machine from unfolding when in transport.

NOTE: Do not lower the Soybean Machine while it is in the folding position.

19. Check to see that all nuts and bolts are tight. See the "Section 2 Torque Values Chart", page 7, for torque specifications.

Tractor Hook-up

The machine can be equipped with a single strap or clevis type hitch as shown in Figure 2-2 & Figure 2-3. Use single strap when hooking up to a clevis type tractor drawbar. Spacers between the drawbar and hitch may be added to eliminate some of the movement of the tongue caused from positive to negative tongue weight.
Section 2 Assembly Instructions & Set-Up

The tongue jack makes it possible to raise or lower the hitch for tractor unhooking and reconnecting. Always return jack to its horizontal storage position on top of the tongue, Figure 2-5, and re-pinning before transporting machine.

![Storage Position](image)

**CAUTION!**

This machine has both positive and negative tongue weight. Never unhook from the tractor with the boxes unfolded and raised off the ground.

**Tractor Hydraulic Hook-up**

For easiest operation, your tractor should be equipped with four remote outlets (2 pair). One pair will be used for lifting the machine. The second pair will be used for folding the machine.

**CAUTION!**

Escaping fluid under pressure can have sufficient force to penetrate the skin. Check all hydraulic lines and hoses before applying pressure. Fluid escaping from a very small hole can be almost invisible. Use paper or cardboard, not body parts, to check.
Bleeding The Lift Hydraulics

This folding machine is equipped with rephasing type hydraulic lift cylinders that require a special procedure for bleeding air from the hydraulic system. If your dealer has not already prepared the cylinders for transport use, read the following information carefully. The rephasing cylinders will not function properly if this bleeding procedure is not followed. **Do not** crack hose fittings in order to bleed cylinders.

1. If required, raise your machine 1" in order to extend your lift cylinders a little. Loosen the jam nuts on top of the transport vertical tubes and screw the adjustment screw in until it bottoms. Lower the machine a small amount until the cylinders become loose.

2. Unpin the cylinders from the main frame and turn the cylinders upside down to a position where the rod end is higher than the base end. Support the cylinders in a safe location. One transport tire may have to be removed in order to unpin the master cylinder.

3. Start the tractor and run the engine at idle. With the rod end of the cylinders higher than the base end, hydraulically extend the cylinders and hold the tractor control lever in position for sixty seconds after the cylinders have extended to their maximum stroke.

4. Hydraulically retract the cylinders, then repeat the extending procedure several more times until both cylinders are free of air and operate together.

5. Repin the cylinders to the main frame, rod end down. If air is trapped in either cylinder, the affected cylinder will have a spongy, erratic movement and the machine will not raise evenly. Refill the tractor hydraulic fluid reservoir to its proper level.

**NOTE:** Check the hydraulic fluid level in the tractor reservoir and fill to the proper level before starting this procedure. If the bleeding process is performed with a low reservoir supply, there is a chance of drawing air into the system. System capacity is approximately 3.3 gallons.

**IMPORTANT:** When using sealant on pipe threads, the friction between the threads is reduced; therefore, be certain not to over tighten causing damage to the cylinders, valves, or fittings.

Bleeding The Folding Hydraulics

**NOTE:** The Bean Machine lift system should be completely operational before attempting to set up the folding hydraulic circuit.

1. With the machine unfolded & lowered to the ground. Unpin the rod end of each fold cylinder and support cylinders so it will not fall.

2. Make sure the tractor hydraulic fluid reservoir is filled to the proper level. System capacity is approximately 1/2 gallon and requires 1 remote outlet.

3. Hook up the folding cylinder hydraulic hoses to the tractor remote outlets.

4. Loosen the hose connection at the base end of each cylinder.

5. With the tractor at idle, slowly work the tractor remote lever to extend the cylinders.

6. When the cylinders are fully extended, tighten the two base end connections.

7. Repeat the procedure with the hose connection at the rod end ports.

8. Reconnect hydraulic cylinders.

**NOTE:** The JIC type hose connections do not require sealant or high torque for a good seal when reconnecting.

9. Refill the tractor hydraulic fluid reservoir to its proper level.

**NOTE:** The lift cylinders are rephasing type cylinders. This bleeding procedure will not work on rephasing cylinders. See “Section 2 Bleeding Lift Hydraulics” on page 11 for correct bleeding procedure.

10. If the fold cylinders do not operate properly, clean out small orifice hole in fittings circled on fold hydraulics illustration, Figure 3-1.
Operating The Hydraulic System

Lifting
The lift cylinders may after a period of time get out of time or phase. The effects of this can be seen when one cylinder is either overextended or over retracted compared to the other lift cylinders. To rephase the cylinders, raise the machine completely up and hold the tractor hydraulic lever on for a few seconds to give the cylinders time to rephase. This should be done each time the machine is raised out of the ground. Momentarily reversing the hydraulic lever immediately after rephasing to allow the cylinders to retract about 1/2" will help in maintaining a level drill.

Unfolding
1. Remove pin from pull-bar transport lock, Figure 3-2. Pin must always be used when transporting the machine in the folded position.
2. Unfold boxes using hydraulic cylinders. Do this very slowly and carefully. Serious damage could occur if done fast and carelessly. Folding and unfolding is best achieved on level ground. Install lock pin in bar slide.
3. Apply hydraulic pressure to the raising and lowering system. Raising the machine may be required to free up the transport lock pins in the vertical tubes for removal, Figure 3-3.

4. Place pins into storage position, Figure 3-4

**Folding**

1. To fold the machine, reverse the order of the unfolding instructions. Be sure all transport devices are in place before transporting, Figure 3-2 & Figure 3-3.
2. When folding the machine, the machine transport stabilizer frames should line up with the nests on the front of the main frame, Figure 3-6.

If they scrape the wing on the tongue, the boxes can be raised or lowered by adjusting the wing adjustment clevis, Figure 3-7.

Pull Bar Adjustment
With the machine completely unfolded, the drill boxes should be in line with each other, and parallel to the back of the main frame. Should your drill boxes require alignment, simply disconnect the screw clevis end of the pull bar and screw it in or out to move the box forward or backwards. Once the boxes are aligned, be sure the pull bars are pinned to the tongue slide and that the tongue slide is pinned for field position.

Transporting
Before transporting the machine, you should always check the following items:
1. To prevent possible damage in case of hydraulic failure during transport, Always insert safety lock pins when transporting, Figure 3-3.
2. Check to be sure the pull bar transport lock pin is in position to insure boxes will not open during transport, Figure 3-2.
3. Check to see if you have the required air pressure in your tires using the "Section 2 Tire Inflation Chart" on page 7.
4. When in transport, use accessory lights and devices for adequate warning to other operators of other vehicles, and use safety hitch chain. Comply with all
Section 4  Seeding Adjustments

Seed Rates

NOTE: Seeding rates will vary greatly with variations in sizes of the seeds. Although the seeding rates listed in this manual are based on an average seed size, we recommend that you test and adjust your machine using the procedures listed below to help insure an accurate seeding rate.

1. Rotate each gauge wheel to see that feed cups and drive are working properly and are free from foreign matter.

2. To adjust your seeding rate, first you must decide which sprocket arrangement you need (see seeding chart). In order to change sprockets, remove nut in center of double speed change sprocket and turn it over. Loosen the idler arm bolt, put chains on and tighten both bolts. (The chains need to be reversed to make this change.)

3. There are many factors which will affect seeding rates: seed treatment, weight of seed, size of seed, surface condition of seed, and tire configuration, pressure and slippage. Minor adjustments will probably be needed to compensate for the above factors.

4. The pounds-per-acre in the seed charts are based on machines having 9.5L x 15" rib implement gauge wheel tires with proper air pressure. "Section 2 Tire Inflation Chart" on page 7.

5. The differences in seed size and treatment can cause a wide variation in actual seeding rates. The seed rate chart below is based on average size seed. This may differ from the seed you are using. Use the seed rate charts as a guide. Set the pounds-per-acre desired at the indicator number for your row spacing and complete the following procedure to calibrate the machine for your specific seed.

   a. Place several pounds of seed over three of the feeder cups at the outboard end of one seed box.
   b. Pull the seed tubes out of these openers.
   c. Raise the machine off the ground.
   d. Place a container under the three seed tubes to gather the seed as it is metered.
   e. Rotate the drive gauge wheel until one acre has been tallied on the acremeter. This will be approximately 182 rotations on a 30' machine. Be sure to check the three feeder cups to make sure each cup has plenty of seed coming into it.
   f. Weigh the seed which has been metered. Divide by three. This will give you the ounces/pounds metered by each feeder cup. Multiply by the number of openers on your machine to arrive at the total pounds-per-acre you would meter at that setting. If this figure is different than desired, set your feed cup adjustment lever accordingly. Repeat procedures (a) through (f) on both sections.

6. You may want to repeat the calibration procedure if the results of your calibration vary greatly from the suggested settings contained in this manual.

REMEMBER: Tire size and field conditions will also affect seeding rates. Be certain that your gauge wheel tires are 9.5L x 15" and that they are inflated to the correct pressure. See "Section 2 Tire Inflation Chart" on page 7. When planting check the amount of seed you are using by noting acres planted, amount of seed added to machine and level of seed in box. If you suspect that you are planting more or less seed than desired, and you have accurately calibrated the machine to your seed, you may need to adjust the seeding rate slightly to compensate for your field conditions.

Seed Rate Chart

<table>
<thead>
<tr>
<th>Setting number</th>
<th>5</th>
<th>10</th>
<th>15</th>
<th>20</th>
<th>25</th>
<th>30</th>
<th>35</th>
<th>40</th>
<th>45</th>
<th>50</th>
<th>55</th>
<th>60</th>
<th>65</th>
<th>70</th>
<th>75</th>
<th>80</th>
<th>85</th>
<th>90</th>
<th>95</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybeans</td>
<td>1</td>
<td>0</td>
<td>8</td>
<td>10</td>
<td>17</td>
<td>25</td>
<td>30</td>
<td>34</td>
<td>40</td>
<td>49</td>
<td>54</td>
<td>60</td>
<td>68</td>
<td>73</td>
<td>78</td>
<td>82</td>
<td>93</td>
<td>94</td>
<td>95</td>
<td>96</td>
</tr>
<tr>
<td>Wheat</td>
<td>1</td>
<td>0</td>
<td>6</td>
<td>10</td>
<td>14</td>
<td>19</td>
<td>24</td>
<td>29</td>
<td>34</td>
<td>39</td>
<td>44</td>
<td>50</td>
<td>59</td>
<td>60</td>
<td>67</td>
<td>73</td>
<td>79</td>
<td>87</td>
<td>88</td>
<td>91</td>
</tr>
<tr>
<td>Cotton</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>10</td>
<td>12</td>
<td>16</td>
<td>18</td>
<td>22</td>
<td>26</td>
<td>28</td>
<td>34</td>
<td>38</td>
<td>40</td>
<td>42</td>
<td>50</td>
<td>58</td>
<td>64</td>
<td>68</td>
<td>70</td>
</tr>
<tr>
<td>Milo</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>6</td>
<td>9</td>
<td>12</td>
<td>14</td>
<td>18</td>
<td>22</td>
<td>23</td>
<td>27</td>
<td>32</td>
<td>33</td>
<td>36</td>
<td>39</td>
<td>41</td>
<td>44</td>
<td>52</td>
<td>53</td>
<td>54</td>
</tr>
</tbody>
</table>

Seed sizes vary. These Charts were calculated with average size cleaned seed. We strongly recommend that you test and adjust your machine for accurate planting of your seed variety.
**Section 4 Seeding Adjustments**

**NOTE:**

<table>
<thead>
<tr>
<th>Drive Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>3 Times Type 2</td>
</tr>
<tr>
<td>Type 1-A</td>
<td>2 Times Type 1</td>
</tr>
<tr>
<td>Type 2-A</td>
<td>2 Times Type 2</td>
</tr>
</tbody>
</table>

![Diagram of Drive Types](image)

**Drive Types**

Figure 4-1
Section 5 Basic Operation

Drill Preparation
And Field Operations

1. Your machine is equipped with an areemeter and it should be mounted to the left gauge wheel axle. It will accumulate the total acres planted. In order to find out the acres covered, write down the beginning reading and subtract it from the ending reading for the total acres planted.

2. Make sure that the feed cup adjustment handle on each cup is set the same across the machine.

3. With the drill hooked up to the tractor, load seed box with seed. You should use cleaned seed to get the best results.

4. Never back up with row units in ground. If you do, check all rows to be sure none are plugged.

5. Never allow anyone to ride on the machine.

6. Maximum seeding speed should vary according to soil conditions.

7. This Bean Machine is not designed to be turned sharply in the field. Always lift the machine out of the ground when turning at ends of field rows and other short-radius turns. If the machine is not completely raised, the lift hydraulics will become out of sequence. See “Section 2 Bleeding Lift Hydraulics” on page 11.

8. Never unhook the Bean Machine from tractor with boxes unfolded and raised off the ground. Negative tongue weight is present in this position.

If you notice excessive cracking on large seeds, adjust all feeder cup door handles to a more open position.

Transporting

- This machine can be transported with a full box of seed. It is best not to do this unless necessary because the increased weight does increase the chances for problems on the road. Do not exceed 20 miles per hour.

- Be sure your gauge wheel tires have proper inflation as listed in the "Section 2 Tire Inflation Chart" on page 7.

- Comply with all Federal, State and Local Safety Laws when traveling on public roads.

- Remember, the drill is wider than the tractor and extreme care must be taken to allow for safe clearance.

Preparing the Drill

Unfold the machine on a level seedbed typical to your planting soil conditions.

At the top of both vertical axle tubes on transport frame is a threaded adjustment stud and jam nut, Figure 5-1.

Make sure both studs have approximately the same length of threads extending above the jam nut (approximately 3" for most planting conditions). Adjustments may be required and is covered in “Section 6 Transport Wheel Adjustments” on page 19. Put the transport pins in storage position, Figure 3-4. Slowly lower the machine until it is on the ground and the top slide cylinder is fully extended, Figure 5-2. Pull the machine forward a few feet to make sure that the transport and gauge wheel tires have firm contact with the soil.

Leveling

Opener Parallel Arms Adjustments

The row unit parallel arms are the indicators of the level of the machine, because they show the amount of down float left in the row unit.

Lower the Bean Machine on a level seedbed and pull for-
ward a few feet then check the planters parallel arms. The parallel arms should be level with the ground, Figure 5-3.

If all the parallel arms along the Bean Machine are the same, the machine is level and you should tighten down the threaded adjustment studs and jam nut as described in “Section 6 Transport Wheel Adjustments” on page 19 for leveling. If the parallel arms vary, the Bean Machine can be leveled with transport and gauge wheel adjustments described in "Section 6 Gauge Wheel Adjustments" on page 19.

⚠️ **CAUTION!**

If the planter vertical travel is decreased, considerable damage could occur to the planter units.
Transport Wheel Adjustments

When leveling your Bean Machine, planter parallel arms near the center of the machine that are higher above level than desired can be adjusted by raising the transport frame. This is done by slowly raising the machine until level with the hydraulic lift cylinders. Planter parallel arms near the center that are lower than desired are adjusted by lowering the transport frame by retracting the cylinders. Once the parallel arms are at the desired setting, screw the threaded adjustment studs on top of the vertical tubes down as far as possible and secure them with the jam nuts, Figure 5-1. This adjustment will stop the lift cylinder travel at the same point each time the boxes are lowered for planting and assures accurate seed depth control.

NOTE: If it is noticed that one box row’s parallel arms are different from the other box at the center of your machine is a sign that your lift hydraulic master and slave cylinders are out of sequence with one another. In order to get them back in sequence simply raise your machine all the way up and hold your tractor hydraulic control valve lever on for a few seconds. Now lower your machine and both cylinders will be in sequence with one another and your two boxes should be at the same level again.

Gauge Wheel Adjustments

The planter rows near the outside of the machine are adjusted by raising or lowering the gauge wheels. Raise the machine out of the ground and loosen the jam nut located near the bottom clevis of the gauge wheel turnbuckle, Figure 6-1. This turnbuckle is threaded to allow easy gauge wheel adjustment. By lengthening the turnbuckle the gauge wheel is lowered, also lowering parallel arms. By shortening the turnbuckle the gauge wheel is raised, also raising parallel arms. After adjusting, be sure the turnbuckle on both gauge wheel arms have the same pin center dimensions.

Down Force Row

Standard Spring Package

The standard down force spring package, consists of 2 non-adjustable springs applying approximately 90 lbs. of down force.

Optional Medium and Heavy Duty Spring Package

The medium and heavy duty spring packages consist of 2 or 4 adjustable springs, respectively. The medium duty package can be adjusted from approximately 100 to 200 lbs. down force. The heavy duty package can be adjusted from approximately 200 to 400 lbs. of down force.

Spring Adjustments

• All spring adjustments must be made with the machine in the fully raised position.

NOTE: The maximum down force stated before is reached when the parallel arms are all the way up.

• The spring package is adjustable from 90 lbs. to 325 lbs. of down force when the parallel arms are horizontal. Consult the Down Force Pressure Chart on page 20 to obtain the desired down force.

NOTE: The maximum down force stated before is reached when the parallel arms are all the way up. To adjust the spring tension, lift the plunger by pulling up on the roll pin handle and sliding the handle adjustment assembly into the appropriate hole, see Figure 6-2.

• Two springs can be purchased at your Great Plains Dealer to make the medium duty package into a heavy duty package or two springs can be removed from the heavy duty package to make a medium duty package. Add or subtract springs by removing the snap ring at the end of the spring pivot rod. Slide the rod inward to add or remove a spring from each side. Then attach or remove the other spring end on the hex bar support. Reinstall the spring rod and snap ring on each side.
Row Unit Mounted Coulter

The optional coulter allows the planter to penetrate tough ground conditions. It is recommended that either the medium duty or heavy duty spring package be used in conduction with this coulter.

Coulter Adjustments

1. To adjust the coulter vertically, loosen the 3/4" jam nut and the 3/4" x 3" long hex bolt, see Figure 6-3.
2. By turning the cam hex, rotate the cam casting to set the desired height. For wavy coulter blades, it is recommended that the coulter blade should be run even to 1" below the disks on the row unit.
3. Tighten the bolt and jam nut to torque values in "Section 2 Torque Value Chart" on page Reference 3.

Depth Adjustment

The planting depth of the row unit is controlled by 2 walking gauge tires located next to the disks.

Adjust the planting depth as follows:

1. Raise the machine to remove weight from the gauge tires.
2. Raise the T-handle and move it forward to decrease the planting depth, see Figure 6-4. Moving the handle rearward increases the planting depth. Small increments of depth adjustment can be made by walking the T-handle from side to side.
3. After one row is set to the desired depth, move the T-handle on the other rows to the same location.

Down Force Pressure Chart

<table>
<thead>
<tr>
<th>To Obtain This Down Force</th>
<th>Use This # of Springs</th>
<th>In This Hole</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 lbs.</td>
<td>2</td>
<td>A</td>
</tr>
<tr>
<td>105 lbs.</td>
<td>2</td>
<td>B</td>
</tr>
<tr>
<td>125 lbs.</td>
<td>2</td>
<td>C</td>
</tr>
<tr>
<td>140 lbs.</td>
<td>2</td>
<td>D</td>
</tr>
<tr>
<td>160 lbs.</td>
<td>2</td>
<td>E</td>
</tr>
<tr>
<td>185 lbs.</td>
<td>4</td>
<td>A</td>
</tr>
<tr>
<td>215 lbs.</td>
<td>4</td>
<td>B</td>
</tr>
<tr>
<td>245 lbs.</td>
<td>4</td>
<td>C</td>
</tr>
<tr>
<td>285 lbs.</td>
<td>4</td>
<td>D</td>
</tr>
<tr>
<td>325 lbs.</td>
<td>4</td>
<td>E</td>
</tr>
</tbody>
</table>

* Force when arms are parallel.

1 x 12 Closing Wheel Adjustments

The 1 X 12 closing wheel option can be adjusted for down force, alignment, and offset.

Closing Wheel Down Force Adjustment

Adjust the closing wheel down force to permit proper closing of the seed trench. It is recommended to start with
the T-handle in the first of 4 notches, see Figure 6-5. If the seed trench is not closing move the handle to the next notch back and try again. Keep moving the handle back until the seed trench is closing, by doing this eliminates unnecessary down force and compaction. In some field conditions, the T-handle can be left in the forward slot to minimize down force.

Closing Wheel Alignment (Refer to Figure 6-6)
If one closing wheel is running in the seed trench or the wheels are not centered over the seed trench, adjust the closing wheels as follows:
1. Raise the machine slightly to remove weight from the closing wheels.
2. Loosen the two 1/2" bolts.
3. Turn the press wheel adjuster left or right to center the wheels over the seed trench.
4. Tighten the 1/2" bolts to the correct torque value listed in "Section 2 Torque Values Chart" on page Reference3.

Closing Disk Adjustments
The closing disk options consist of two disks and a 6 1/2 x 12 press wheel. The disk down pressure can be adjusted to provide closing of the seed trench.
To adjust the down pressure, ratchet the spring cam to the next cam height by turning the head of the support bolt clockwise. Refer to Figure 6-8.

Closing Wheel Offset
The 1x12 wheels can be offset to help prevent trash from plugging the closing wheels. If the closing wheels are not offset, the wheels should be located in the front holes of the press wheel arm.
To offset the wheels, do as follows:
1. Raise machine slightly to remove weight on the closing wheels.
2. Remove the 3/4" bolt holding the wheel, see Figure 6-7.
3. Move the wheel to the rear hole and attach with the 3/4" bolt. Tighten the bolt to the correct torque value listed in "Section 2 Torque Values Chart" on page Reference3.
Seed Lok

The seed lok option provides additional seed to soil contact. The seed lok is spring loaded and does not require adjusting. In some wet and sticky conditions the wheel may accumulate soil and may require removal of the seed lok until conditions improve.

The seed lok is attached to the shank with a 1/2" clevis pin, see Figure 6-9. To remove the seed lok, remove the clevis pin and pull down on the seed lok mount. Reattach in the reverse order.

Seed Lok Assembly

Figure 6-9
Section 7 Maintenance & Lubrication

Maintenance
Proper servicing and adjustment is the key to the long life of any farm implement. With careful and systematic inspection, you can avoid costly maintenance, time and repair.

1. After using your implement for several hours, check all bolts to be sure they are tight.
2. Lubricate the marker-body hinges every 15 hours of operation.
3. Adjust idlers to remove excess slack from chains. Clean and use chain lube on all roller chains as needed.
4. Oil the seed-cup-drive sprocket in its square bore. Move seed-cup adjustment lever away from the sprocket as far as possible to get the oil back into the square.
5. Always maintain the proper air pressure in the rib implement tires.
6. Replace any worn, damaged or illegible safety decals by obtaining new decals from your Great Plains Dealer.

Storage
1. Clean the implement as necessary. Be sure that the seed boxes are completely cleaned before storing.
2. Lubricate and adjust all roller chains.
3. Lubricate all pivots as indicated in the following illustrations.
4. Be sure to oil the seed-cup-drive sprocket before storing the implement. Squirt oil on to the square seed-cup shaft and move seed-cup-adjustment lever back and forth to get the oil back into the square.
5. Disconnect seed hoses from parallel-linkage openers. Permanent elongation and premature cracking of hoses may occur if stored connected.
6. Store the implement inside if possible for longer machine life.

Lubrication

<table>
<thead>
<tr>
<th>Lubrication Legend</th>
<th>Multipurpose spray lube</th>
<th>Multipurpose grease lube</th>
<th>Multipurpose oil lube</th>
<th>Intervals at which lubrication is required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Post Pivot</td>
<td><img src="12703" alt="Upper Post Pivot" /></td>
<td>Type of Lubrication: Grease</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower Post Pivot</td>
<td><img src="12704" alt="Lower Post Pivot" /></td>
<td>Type of Lubrication:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Section 7 Maintenance & Lubrication

**Axle Bearings**
- Type of Lubrication: Grease

**Parallel Arm**
- Type of Lubrication: Grease

**Box Pivot**
- Type of Lubrication: Grease

**Feeder Cup Drive Shaft Sprocket Bearing**
- Type of Lubrication: Grease
Section 7 Maintenance & Lubrication

Chain
Type of Lubrication: Spray

Chain
Type of Lubrication: Spray

Chain
Type of Lubrication: Spray

Flange Bearing
Type of Lubrication: Grease
## Section 8 Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uneven seed spacing or uneven stand</td>
<td>a. Check for trash in seed cup.</td>
</tr>
<tr>
<td></td>
<td>b. Check to see if seed tubes are plugged.</td>
</tr>
<tr>
<td></td>
<td>c. Reduce ground speed.</td>
</tr>
<tr>
<td></td>
<td>d. Check planter disks to see they turn freely.</td>
</tr>
<tr>
<td></td>
<td>e. Use faster drive type speed and close feed cup flutes to a more narrow position.</td>
</tr>
<tr>
<td>Planter disks not turning freely</td>
<td>a. Check for trash or mud buildup on disk.</td>
</tr>
<tr>
<td></td>
<td>b. Check row frame for possible damage.</td>
</tr>
<tr>
<td>Actual seeding rate is different than desired</td>
<td>a. Check tire pressure. Proper inflation is listed on page 6 in &quot;Tire Inflation Chart&quot;.</td>
</tr>
<tr>
<td></td>
<td>b. Check tire size. Proper size is 9.5L x 15”.</td>
</tr>
<tr>
<td></td>
<td>c. Liquid seed treatment will affect seeding rate if the chemicals build up in feed cup. Unless cleaned regularly, this build up can cause increased torque and breakage of the feed shaft.</td>
</tr>
<tr>
<td></td>
<td>d. Check drive type. See &quot;Section 4 Seed Rate Chart&quot; page 15.</td>
</tr>
<tr>
<td></td>
<td>e. See instructions on calculating seed rate.</td>
</tr>
<tr>
<td>Excessive seed cracking</td>
<td>Change drive type to a slower speed and open flutes in feed cup to a wider position.</td>
</tr>
<tr>
<td>Acremeter doesn’t measure accurately</td>
<td>a. Check tire pressure. Proper inflation is listed in “Section 2 Tire Inflation Chart” on page 7.</td>
</tr>
<tr>
<td></td>
<td>b. Check tire size. Proper size is 9.5L x 15”.</td>
</tr>
<tr>
<td></td>
<td>c. Check planting operation for excessive overlap or gaps between passes.</td>
</tr>
<tr>
<td></td>
<td>d. Loose soil conditions and slippage will cause variations in acres registered.</td>
</tr>
<tr>
<td></td>
<td>e. To check accuracy of acremeter. See &quot;Section 4 Seed Rates” page 15.</td>
</tr>
<tr>
<td>Uneven seeding depth</td>
<td>Check to see that all planter units are adjusted the same.</td>
</tr>
<tr>
<td>Press Wheel not compacting the soil as desired</td>
<td>Check the spring tension bolt on the back of the press wheel arm. The spring pressure can be adjusted heavier or lighter.</td>
</tr>
<tr>
<td>Grain box not emptying evenly</td>
<td>a. Certain models do not have the same number of seed cups between each divider of bulkhead. The section with the larger number of cups will empty sooner.</td>
</tr>
<tr>
<td></td>
<td>b. If your machine has multiple boxes, check adjustment levers on each box to see that they are set on the same indicator number.</td>
</tr>
<tr>
<td>Feeder cup sprockets locked up or twisted</td>
<td>a. Check for foreign matter lodged in one or more feeder drive shaft feeder cups.</td>
</tr>
<tr>
<td></td>
<td>b. Liquid insecticide from seed has dried within the feed cup. Remove the build up by disassembling each feed cup and scrape the foreign substance from the turning surfaces. NOTE: Liquid inoculant should be applied with caution and care should be taken to clean the feeder system after planting treated seeds.</td>
</tr>
</tbody>
</table>
Section 8 Troubleshooting

Press Wheels and planters plugging

a. Drilling in damp or wet conditions may increase this problem.

b. DO NOT back up machine in field, or stop and allow machine to roll backwards with openers in the ground.

Gauge Wheel leans to left or right

a. Realign brackets where gauge wheel is attached to main frame by adjusting the mounting bolts.

b. Check to see if gauge wheel axle bearing are securely attached to gauge wheel arm.

Improper folding of drills

a. Adjust post frame adjusting links Figure 3-7 in "Section 3" on page 14.

b. Check hydraulic system for air and oil leaks.

c. Clean out small orifice fittings in wing cylinders.

d. Make sure that the wing boxes unfold and are aligned, see “Section 3 Pull Bar Adjustments”, on page 14.

Hydraulic adaptors cracking

a. JIC fittings do not require high torque.

b. Always use liquid pipe sealant when adding or replacing pipe thread hydraulic fittings. Plastic sealant can crack fittings and plug hydraulic lines. JIC and O-ring fittings do not require sealant. O-ring fittings require a thin coat of oil on the O-ring. IMPORTANT: When using sealant on pipe threads the friction between the threads is reduced; therefore, be certain not to over tighten causing damage to the cylinders, valves, or fittings.

Raising and lowering machine is rough

a. Lubricate lower rollers of vertical transport tubes and uneven located between the transport tires.

b. Check hydraulic fittings for leaks.

c. Rephasing cylinders not properly bled. See “Section 3 Hydraulics” on page 11. When raising machine at end of field the lifting cylinders should be fully extended to insure that they are always rephased.
### Section 9 Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Row Spacing</td>
<td>15”</td>
</tr>
<tr>
<td>Numbers of Rows</td>
<td>24</td>
</tr>
<tr>
<td>Machine Weight</td>
<td>10,800 Pounds</td>
</tr>
<tr>
<td>Box Length</td>
<td>15’</td>
</tr>
<tr>
<td>Unfolded Machine Width</td>
<td>30’ - 6”</td>
</tr>
<tr>
<td>Tire Size</td>
<td>9.5L x 15” 6-Ply</td>
</tr>
<tr>
<td>Box Capacity</td>
<td>2 Bushels/Foot</td>
</tr>
<tr>
<td>Transport Width</td>
<td>15’ - 6”</td>
</tr>
<tr>
<td></td>
<td>16’ - 10” with coulters</td>
</tr>
</tbody>
</table>

Weights are based on machines equipped with planter units without coulter attachments.

![Diagram](image-url)
Warranty

Great Plains Manufacturing, Incorporated warrants to the original purchaser that this seeding equipment will be free from defects in material and workmanship for a period of one year from the date of original purchase when used as intended and under normal service and conditions for personal use; 90 days for commercial or rental purposes. This Warranty is limited to the replacement of any defective part by Great Plains Manufacturing, Incorporated and the installation by the dealer of any such replacement part. Great Plains reserves the right to inspect any equipment or part which are claimed to have been defective in material or workmanship.

This Warranty does not apply to any part or product which in Great Plains’ judgement shall have been misused or damaged by accident or lack of normal maintenance or care, or which has been repaired or altered in a way which adversely affects its performance or reliability, or which has been used for a purpose for which the product is not designed. This Warranty shall not apply if the product is towed at a speed in excess of 20 miles per hour.

Claims under this Warranty must be made to the dealer which originally sold the product and all warranty adjustments must be made through such dealer. Great Plains reserves the right to make changes in materials or design of the product at any time without notice.

This Warranty shall not be interpreted to render Great Plains liable for damages of any kind, direct, consequential, or contingent, to property. Furthermore, Great Plains shall not be liable for damages resulting from any cause beyond its reasonable control. This Warranty does not extend to loss of crops, losses caused by harvest delays or any expense or loss for labor, supplies, rental machinery or for any other reason.

No other warranty of any kind whatsoever, express or implied, is made with respect to this sale; and all implied warranties of merchantability and fitness for a particular purpose which exceed the obligations set forth in this written warranty are hereby disclaimed and excluded from this sale.

This Warranty is not valid unless registered with Great Plains Manufacturing, Incorporated within 10 days from the date of original purchase.